0001

State of Utah

DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER QUALITY

Check issued 12-14-95

Michael O. Leavitt
Governor

Dianne R. Nielson, Ph.D.
Executive Director

Don A. Ostler, P.E.
Director

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Don A. Ostler, P.E.
Executive Secretary

DEC 1995
Received
Utah Fuel Co.
Skyline Mine

December 12, 1995

CERTIFIED MAIL
(Return Receipt Requested)

Mr. Ken Payne, Vice President & General Manager
Utah Fuel Company, Skyline Mine
PO Box 719
Helper, Utah 84526

Dear Mr. Payne:

Subject: UPDES Permit No. UT0023540, Final Stipulation and Consent Order, Docket No. I95-02CO

Transmitted herewith is the duly executed (signed and dated by the Executive Secretary) Stipulation and Consent Order, Docket No. I95-02CO. Please remit the payments in full of $9,244.00 to the Division of Water Quality and $7,166.67 to the Division of Wildlife Resources as per paragraph 3 under the Order portion of the Stipulation and Consent Order.

We appreciate your cooperation in resolving this matter. Thank you.

Sincerely,

Utah Water Quality Board

Don A. Ostler, P.E.
Executive Secretary

DAO:MDH:ja
Enclosure
cc: Fred Nelson, Attorney General's Office (w/encl)
Mike Reed, EPA Region VIII (w/encl)
Dianne Nielson, Dept. of Environmental Quality (w/encl)
Claron Bjork, Southeastern Utah District Health Dept. (w/encl)
David Ariotti, Regional Engineer (w/encl)
Joe Helfrich, Division of Oil, Gas & Mining (w/encl)
Bill Bradwisch, Division of Wildlife Resources (w/encl)
Jeff DeFriest, US Forest Service (w/encl)
Harry Carmichael, EPA Region VIII (8ENF-T) (w/encl)

P:PAYNECO.LTR

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THE UTAH WATER QUALITY BOARD

(	**IN THE MATER OF**	:	**DOCKET NUMBER I95-02CO**	)
(	**UTAH FUEL COMPANY**	:		)
(	**SKYLINE MINE**	:	**STIPULATION AND CONSENT ORDER**	)
(	**SCOFIELD, UTAH**	:		)

The **Utah Water Quality Board ("BOARD)** issues this **Stipulation and Consent Order (hereinafter CONSENT ORDER)** under the *Water Quality Act (The "Act)*, including *subsections 19-5-104*, 105, 106, 111 and *115, Utah Code Annotated, (1953) as amended)*, and in accordance with the *Utah Administrative Procedures Act, subsections 63-46b-1, et seq.*

STIPULATION

1. The parties agree that the **BOARD** has jurisdiction over this matter.

2. **SKYLINE MINE** owns and /or operates an underground coal mining operation approximately 7 miles southwest of Scofield, Utah on Eccles Creek.

3. Wastewater disposal by **SKYLINE MINE** is subject to the requirements of the Act and rules adopted thereunder, specifically *Utah Administrative Code (USC) R317.*

4. **SKYLINE MINE** was issued a Utah Pollutant Discharge Elimination System (UPDES) permit UT0023540 on October 1, 1993.

5. On September 6, 1995 **SKYLINE MINE** had a discharge of longwall mining fluid which caused a fish kill in Eccles and Mud Creeks. The incident which occurred and actions taken by **SKYLINE MINE** to abate the problem are elaborated in a letter

dated September 11, 1995 from Barry Barnum of Skyline to Mike Herkimer of the Division of Water Quality. This letter is included in Appendix A of this **CONSENT ORDER.**

6. The number of fish killed and associated costs for replacement were presented by the Division of Wildlife Resources in a September 20, 1995 letter to Don Ostler of the Division of Water Quality. This letter is included in Appendix B.

7. As a result of the discharge of this longwall mining fluid, **SKYLINE MINE** was in violation of:

   a. Part I.C of UPDES permit number UT0023540

   b. Part I.D.1 of UPDES permit number UT0023540

   c. The Utah Water Quality Act, 19-5-107(1)

   d. Utah Administrative Code (UAC) R317-2-7.1 and 7.2.

8. The parties now desire to resolve this matter fully without further admissions and without further administrative or judicial proceedings except to the extent provided below by entering into this **CONSENT ORDER**.

9. For the purpose of this **CONSENT ORDER** the parties agree and stipulate to the above stated facts. None of the stipulations related herein shall be considered admissions by any person related or unrelated to this **CONSENT ORDER** for purposes other than determing the basis of this **CONSENT ORDER**.

ORDER

1. **SKYLINE MINE** is ordered to install and implement measures to prevent any future releases of longwall mining fluid.

2. In full settlement of these matters **SKYLINE MINE** and the **BOARD** agree to the terms set forth herein;

   a. **SKYLINE MINE** agrees to reimburse $7,166.67 to the Division of Wildlife Resources for the fish kill in Eccles and Mud Creeks.

   b. **SKYLINE MINE** shall pay to the Division of Water Quality $9,244.00 as determined by the Boards's Penalty Criteria for Civil Settlement Negotiations, UAC R317-1-9, which takes into account factors such as the magnitude of the violations, the actual and potential degree of environmental harm, economic benefit and good faith efforts.

3. **SKYLINE MINE** shall make payments in full of the amounts required by paragraph 2 no later than 30 days from the effective date of this **CONSENT ORDER** by separate checks made out to the Division of Wildlife Resources and to the Division of Water Quality and sent to the Division of Water Quality, 288 North 1460 West, P.O. Box 144870, Salt Lake City, Utah 84114-4870.

4. Nothing contained in this **CONSENT ORDER** shall preclude the **BOARD** from taking appropriate action to abate an imminent endangerment to the public health or the environment should such a situation arise at **SKYLINE MINE'S** facilities.

5. Nothing in this **CONSENT ORDER** shall constitute a waiver by **SKYLINE MINE** to raise in its defense any legal or factual contention for future allegations of noncompliance.

6. Nothing in this **CONSENT ORDER** shall constitute or be considered as a release from any claims, to include natural resource damage claims, cause of action, or demand in law or equity which the State may have against **SKYLINE MINE** or any other person, firm, partnership, or corporation for any liability arising out of or relating in any way to the release of pollutants to waters of the state.

This **CONSENT ORDER** shall be come effective upon execution by **SKYLINE MINE** and the Executive Secretary of the Utah Water Quality Board.

DATED this 11th **Day of** December **, 1995**

UTAH FUEL COMPANY, SKYLINE MINE

By: _____

UTAH WATER QUALITY BOARD

By: _____
Executive Secretary

P:UTAHFUEL.ORD

APPENDIX A

Coastal
The Energy People

September 11, 1995

SEP 1995

Mike Herkimer
Division of Water Quality
P.O. Box 144870
Salt Lake City, Utah 84114-4870

Re: Emulsion spill at Skyline Mine, September 6, 1995

Dear Mr. Herkimer:

The following is an account of a spill of emulsion fluid into Eccles Creek which occurred the morning of September 6, 1995.

SUMMARY

On the morning of September 6, 1995, a spill of emulsion, of which 4 percent was neat oil, occurred underground at the Skyline Mine. The totalizer gauge on the emulsion tank indicated that 13,890 gallons of emulsion had been mixed in the previous 15 hours based on recorded reading. Some of this emulsion was used in mining during this period, some was contained and pumped into a sealed area of the mine, and an unknown amount was discharged into Eccles Creek. The discharge of contaminated water was stopped by 12:00 noon on September 6. Following control of the spill, state and federal agencies were notified. Contaminated water in the sediment pond was disposed of in the mine where it would be diluted and biodegraded to render it harmless. No clean up of the released material is possible because it is highly soluble and biodegradable. After draining the pond of contaminated water, the pond was refilled with non-contaminated water which was tested for toxicity and effluent standards. The result of the testing is that the water in the pond is non-toxic and meets effluent limitations so discharge resumed on the afternoon of September 11, with the approval of State regulatory agencies.

DETAILED ACCOUNT

On the morning of September 6, the day shift observed that Eccles Creek and the Skyline Mine sediment pond appeared murky. A search began immediately for the cause of the murkiness and the stream was surveyed to determine the extent of the murky condition. It was determined that the source was the discharge from Mine #1. This discharge was then diverted to a sealed area of the mine. Also pumping was initiated from the sediment pond into the mine to stop further discharge from the pond into Eccles Creek. The flow from the pond into Eccles Creek at 9:45 am had been reduced to approximately 265 gpm and at around 11:20 am was less than 50 gpm. By around 12:00 noon the flow from the pond had been completely stopped.

Utah Fuel Company
A SUBSIDIARY OF THE COASTAL CORPORATION
P.O. BOX 719 • HELPER UT 84526-0719 • 801/637-7925 • FAX 801/637-7929 • SALT LAKE 801/596-7111

The water from Mine #1 and the water from the sediment pond were pumped into a sealed area of Mine #3. This area is sealed off from other parts of the mines and will effectively contain the water. Since the emulsion is biodegradable in 28 days under normal conditions, the water will become inert in a relatively short time frame.

During this time it was determined that the cause of the murky condition was an overflow of the emulsion mixing tank in Mine #1. A mixing valve failed which allowed the emulsion tank to overflow. Such a failure had not been experienced in the past. To prevent such failures in the future a back-up value has been installed in series with the first valve. If one valve fails the second valve will prevent overflow of the mixing tank. Also a second float valve has been installed in the mixing tank so that overflow from the tank will shut off the system completely and sound an alarm on the surface monitoring system.

In the mixing tank Solcenic Ecosyn HL emulsion concentrate (MSDS sheet attached) is mixed with water to form a 4% solution. It is calculated from totalizer readings that approximately 13,890 gallons of the solution were mixed in the tank. Because much of the mixture was used during mining or pumped from the source and from the sediment pond to sealed underground workings, the amount of mixture actually released is unknown, but it is certain that significantly less than 13,890 gallons of emulsion were released into Eccles Creek.

A regularly scheduled UPDES sample was taken at the sediment pond discharge for pH, conductivity, and oil and grease at 9:45 am. The pH was 7.69 and the conductivity was 1187, values which are within the normal range for Skyline UPDES discharge. A one gallon sample of sediment pond water was taken at 9:50 for toxicity testing to determine if the solution in the pond would be harmful to aquatic life. It was decided that a similar sample should be taken from the stream below the sediment pond and this was done at approximately 11:10. The samples were refrigerated for preservation, until they could be delivered to W.E.T. Laboratory in Orem the morning of September 7. As soon as the results are available from testing of these samples they will be reported to the Division of Water Quality.

As soon as the flow was stopped and the extent of the spill was determined and the samples collected and preserved, Mike Herkimer, Environmental Scientist with the Utah Division of Water Quality was notified by telephone at approximately 12:10. Mike stated that he would notify DWR and local health department. After talking with Mike, Pete Hess of the Price Field Office of the Division of Oil, Gas and Mining was notified of the spill.

Bill Bates of DWR arrived at the mine at around 2:30 pm and we discussed the incident then inspected the sediment pond and stream. Bill found one dead fish before arriving at the mine and he found one more dead and one dying during our inspection. Bill continued his inspection until 7:00 to 7:30 pm. Bill estimated at that time that approximately 200 fish per mile of stream were killed.

At about 3:30 pm Dale Harber of the Forest Service called and the incident was described to him. He suggested that the Coast Guard National Response Center should be notified. This was done and Mr. Rutherford of the NRC assigned this incident a case number of 306-616 and said that he would notify EPA. Mr. Joe Byron of the EPA in Denver called shortly before 4:00 pm and the incident was described to him. As a result of the discussion the MSDS sheets for the Solcenic Ecosyn were faxed to him. At 4:30 pm another call from the EPA was received (not Joe Byron) and the person said that he would contact Bill Bates and Mike Herkimer directly to determine if EPA involvement was needed. On September 7 Mr. Byron called to inform us that written follow-up by Utah Fuel to EPA would not be required at this time.

Mike Herkimer of the Division of Water Quality and Steve Demczak of the Division of Oil, Gas and Mining arrived on the site mid-afternoon. Mike took water samples and collected several dead fish with the intention of determining the cause of death - whether death was caused by suffocation or poisoning. Sometime later representatives of the Forest Service arrived and we discussed the incident. They asked to be kept informed, then they left.

Mike then inspected the sediment pond at the mine to make certain all discharge had been stopped. Mike required that Utah Fuel contact the manufacturer of the emulsion on September 7 to obtain the results of any toxicity testing the manufacturer may have completed. Everyone left the site around 7:30 pm.

The morning of September 7 the creek was inspected by Skyline personnel. Dead fish were found from the White Oak loadout to the confluence with Winter Quarters Creek. No dead fish were observed from the confluence to Scofield Lake.

Century Lubricants Co. was contacted to determine the characteristics of the emulsion in a spill situation. The contact at Century is Marv Hart (913-422-4022). Marv informed us that this product is biodegradable and that its effect on fish is to coat the gills resulting in suffocation when the fish are exposed to high concentrations rather than killing the fish by poisoning. Century sent information documenting the biodegradability and toxicity testing of the product. See attached letter and additional MSDS sheet from Marv Hart of Century Lubricants Company. In an additional phone conversation with Mr. Hart on September 7, he stated that under the standard conditions of the approved biodegradation test (OECD test described in 40 CFR 796.3240) this material will biodegrade in 28 days.

On November 23, 1994, a sample of the emulsion was submitted to W.E.T., Inc. for bio-testing. The results of this testing indicate that toxic concentration of the emulsion on fathead minnows is 8.18 mg/liter (see attached results).

A sample of Mine #1 water (the spill occurred in Mine #1) was submitted to W.E.T. for bio-testing on Thursday and it was reported that the water passed the test so it is evident that the emulsion which remained underground has been successfully contained and disposed of in a sealed part of the mine. Since the emulsion is biodegradable it will be rendered inert within a short time.

Pumping to empty the sediment pond of contaminated water continued through September 7. After the pond was emptied uncontaminated water from Mine #3 was used to refill the pond without discharging. Saturday morning around 10:00 samples of the water in the sediment pond were taken and submitted for testing. The pH of the samples was 7.67 and the conductivity was 1330. Verbal approval was received from Dave Darby and Mike Herkimer that if the results of the testing indicated that UPDES effluent limitations would be met, discharge from the sediment pond would be allowed.

The results of testing the samples taken on September 9 were received on September 11. The results are:

pH	7.67
Conductivity	1330
Total Iron	0.7
Dissolved Iron	0.2
Oil & Grease	<5
TSS	25
TDS	1170

These results meet the effluent limitations for the Skyline Mine UPDES Permit UT0023540. Also the result of biomonitoring testing of these samples is that the water in the sediment pond as of September 9 is non-toxic to fathead minnows. See laboratory analysis sheets which are attached. Based on these results and verbal approval from Mike Herkimer discharge from the sediment pond was resumed on the afternoon of September 11.

CONCLUSION

The spill of emulsion which occurred the morning of September 6, 1995, at the Skyline Mine resulted in the release of an undetermined amount of emulsion into Eccles Creek. The discharge of contaminated water was stopped by 12:00 noon on September 6. The emulsion is highly water soluble and biodegradable so no clean-up is possible or necessary. This upset was an unusual incident caused by the failure of a mixing valve. Two back-up shut-off and alarm systems have been installed to prevent such an incident in the future. Testing has shown that the water currently contained in the sediment pond meets effluent standards and is being

discharged with approval from Mike Herkimer of the Division of Water Quality and Dave Darby of the Division of Oil, Gas & Mining.

If there are any questions, please contact Barry Barnum at 636-2669.

Very truly yours,

Barry Barnum

SOLCENIC ECOSYN HL - 5% DI WATER EMULSION

MAIN MENU | MSDS Common Name

Go To 1. Chemical Product and Company Identification
Go To 2. Composition and Information on Ingredients
Go To 3. Hazard Identification
Go To 4. First Aid Measures
Go To 5. Fire Fighting Measures
Go To 6. Handling and Storage
Go To 7. Exposure Controls and Personal Protection
Go To 8. Physical And Chemical Properties
Go To 9. Stability and Reactivity
Go To 10. Toxicological Information
Go To 11. Disposal Information
Go To 12. Regulatory Information
Go To 13. Other Information and Disclaimer
Go To 14. Product Label Information
Go To 15. Skyline Specific Information
Go To 16. SUFCO Specific Information
Go To 17. Soldier Creek Specific Information
Go To 18. Printed Employee Acknowledgement

Section 1 - Chemical and Company Identification

Section Heading Menu | Vendor Indentification (1)

PRODUCT: SOLCENIC ECOSYN HL - 5% DI WATER EMULSION

MANUFACTURER: CENTURY LUBRICANTS CO.
2140 S. 88TH ST.
KANSAS CITY, KS 66111-8701

REVISION DATE: 2/28/95 DOC:462

TELEPHONE: 800-800-6457
CHEM TREC: 800-424-9300

PREPARED BY: M. D. Hart

Section 2 - Composition and Information on Ingredients

Section Heading Menu

HAZARDOUS INGREDIENTS	TLV, TWA, PEL	IARC, NTP, OSHA
TRIAZINE COMPOUND	NONE ESTABLISHED	NOT LISTED
MINERAL OIL	TLV 5mg/M (MIST)	NOT LISTED
ALCOHOL	NO TLV ESTABLISHED	NOT LISTED
ORGANIC ACID SALTS	NO TLV ESTABLISHED	NOT LISTED
POLY GLYCOL	NO TLV ESTABLISHED	NOT LISTED
INORGANIC SALT	NONE ESTABLISHED	NOT LISTED

Section 3 - Hazard Identification

Section Heading Menu

PERMISSIBLE CONCENTRATIONS (AIR) : None established

ROUTE	EFFECT OF OVEREXPOSE
EYES	NONE EXPECTED WITH NORMAL USE
SKIN	NONE EXPECTED WITH NORMAL USE
INHALATION	NONE EXPECTED BELOW TLV. IF TLV EXCEEDED MINOR IRRITATION MAY OCCUR.
INGESTION	NONE EXPECTED WITH NORMAL USE
CHRONIC	NONE EXPECTED WITH NORMAL EXPOSURE

Section 4 - First Aid Measures

Section Heading Menu

ROUTE	EMERGENCY FIRST AID PROCEDURE
EYES	FLUSH WITH WATER. SEE PHYSICIAN
SKIN	WASH WITH SOAP AND WATER. IF HIGH PRESSURE, GET IMMEDIATE MEDICAL ATTENTION.
INHALATION	REMOVE FROM CONTAMINATED AREA ADMINISTER ARTIFICIAL RESPIRATION IF NECESSARY. SEEK MEDICAL ATTENTION.
INGESTION	IF CONSCIOUS, GIVE 2 GLASSES OF MILK. DO NOT INDUCE VOMITING.

GET IMMEDIATE MEDICAL ATTENTION.

Section 5 - Fire Fighting Measures

Section Heading Menu

FLASH POINT (METHOD): N.A.
Flash Point not measurable by conventional methods. Will not burn below 500°F.

EXTINGUISHING AGENTS: DRYCHEMICAL(X) CO_2 (X) WATERSPRAY ( ) FOAM (X)

SPECIAL FIRE FIGHTING PROCEDURES: Avoid breathing vapors. Use breathing apparatus in confined areas. Cool exposed containers with waterspray

HAZARDOUS DECOMPOSITION PRODUCT: Carbon monoxide, carbon dioxide, formaldehyde and unidentified organic compounds.

FLAMMABLE LIMITS-LEL: UNK UEL: UNK

Section 6 - Handling and Storage

Section Heading Menu

PRECAUTIONS IN STORAGE: Keep containers closed when not in use. Do not handle near heat, flames, sparks. Do not weld or heat empty containers. Allow containers which have just been opened to breath a few minutes before use.

Section 7 - Exposure Controls and Personal Protection

Section Heading Menu

RESPIRATION PROTECTION: NONE NORMALLY NEEDED

VENTILATION TYPE: GENERAL ADEQUATE. USE LOCAL MECHANICAL TO INSURE TLV'S NOT SURPASSED WHERE APPLICABLE.

SKIN PROTECTION: CHEMICALLY RESISTANT GLOVES DESIRABLE

EYE PROTECTION: GOGGLES OR FACESHIELD DESIRABLE

OTHER PROTECTIVE MEASURES: NONE NORMALLY NEEDED

Section 8 - Physical And Chemical Properties

Section Heading Menu

SOLUBILITY IN WATER (@ 20 C): VERY

SPECIFIC GRAVITY (WATER=1): <1.0
VAPOR PRESSURE (mmHg @ 20 C): <0.1
EVAPORATION RATE (ether = 1): < 0.01
PERCENT VOLATILE (by weight): 95
VAPOR DENSITY (AIR): > 1.0
STRONG ACID: NO
STRONG BASE: NO
BOILING POINT (DEG F): 212 F IB
MELTING POINT (DEG F): N.A.
APPEARANCE AND ODOR: LIQUID, MILD PETROLEUM ODOR

Section 9 - Stability and Reactivity

Section Heading Menu

STABILITY: STABLE
INCOMPATIBILITY: KEEP AWAY FROM STRONG OXIDIZERS
NOTE: HAZARDOUS POLYMERIZATION WILL NOT OCCUR

Section 10 - Toxicological Information

Section Heading Menu

No Information Available.

Section 11 - Disposal Information

Section Heading Menu

STEPS TO TAKE IN CASE OF SPILL: Add absorbent to spill area. Keep petroleum products out of sewers and waterways. Advise authorities if they do enter.

WASTE DISPOSAL METHOD: Dispose of at appropriate waste facility in accordance with regulations.

Section 12 - Regulatory Information

Section Heading Menu

No Information Available.

Section 13 - Other Information and Disclaimer

Section Heading Menu

UNK MEANS UNKNOWN

EST. MEANS ESTIMATED
N.A. MEANS NOT APPLICABLE
IB MEANS INITIAL BOILING POINT

The information contained herein is based on data considered accurate. However, no warranty, expressed or implied, is given regarding the accuracy of these data or the results to be obtained from the use thereof.

Section 14 - Product Label Information

Section Heading Menu

No Information Available.

Section 15 - Skyline Specific Information

Section Heading Menu

No Information Available.

Section 16 - SUFCO Specific Information

Section Heading Menu

No Information Available.

Section 17 - Soldier Creek Specific Information

Section Heading Menu

No Information Available.

Section 18 - Printed Employee Acknowlegement

Section Heading Menu

SOLCENIC ECOSYN HL - 5% DI WATER EMULSION

No Information Available.

CENTURY LUBRICANTS CO.

FUCHS

September 7, 1995

Skyline Mine
Mr. Darry Barnum
Environmental Foreman
P.O. Box 719
Helper, UT 84526

Darry,

Enclosed you will find a Material Safety Data Sheet for the oil portion of our product Solcenic HL. The oil is present at approximately 50 percent by weight in the concentrate. The acute aquatic toxicity test results for Solcenic HL with fat head minnows are included as well.

It is important to note that Solcenic HL is considered to be readily biodegradable based on the result of 81% that was obtained in the modified MITI screening test described in 40 CFR 796.3240.

I invite you to make use of Century's physical and/or biological test capability and emulsion expertise to assist Skyline in returning to normal operation. Also, Century personnel would be available to assist Skyline in addressing the concerns of the regulatory community.

If you need any additional information or assistance please regarding this matter, please don't hesitate to contact me. My direct telephone line is 913 441 7160.

Sincerely,

Harv Hart

Harv Hart, CHHM
Regulation Specialist

cc: Mike Ryan
Dave Clark
John Manolakis

2140 S. 88th St. • Kansas City, KS 66111-8701 • Telephone: (913) 422-4022 • Fax: (913) 441-2333

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 708-953-9300 FAX: 708-953-9306
SINCE 1908
Member of the SGS Group (Société Générale de Surveillance)

PLEASE ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1020, HUNTINGTON, UT 84528
TEL: (801) 653-2311
FAX: (801) 653-2436

September 11, 1995

UTAH FUEL COMPANY
P.O. Box 719
Helper, Utah 84526

Sample identification by
UTAH FUEL COMPANY

Kind of sample reported to us: Water

Sample taken at: Skyline Mine

Sample taken by: Utah Fuel

Date sampled: September 9, 1995

Date received: September 11, 1995

UPDES-001
Temperature 15.0°C
Flow 0 GPM
Rec'd 0730 hr.
Sampled 1010 hr.

FIELD MEASUREMENTS
pH 7.67
Conductivity 1330

Analysis report no. 59-15388

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Iron, Total	0.7	0.1	mg/l	EPA 236.1	09-11-1995 1145 MK
Iron, Dissolved	0.2	0.1	mg/l	EPA 236.1	09-11-1995 1145 MK
Oil & Grease	<5	5	mg/l	SM5520-B	09-11-1995 0900 JC
Solids, Settleable	<0.5	0.5	ml/l	EPA 160.5	09-11-1995 1100 SW
Solids, Total Dissolved	1170	10	mg/l	EPA 160.1	09-11-1995 0700 JC
Solids, Total Suspended	25	5	mg/l	EPA 160.2	09-11-1995 0815 JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Manager, Huntington Laboratory

OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES
F-465/059/95
Original Watermarked For Your Protection
TERMS AND CONDITIONS ON REVERSE

UNBRANDED 100 SOLV NEUTRAL

EXXON COMPANY, U.S.A.
A DIVISION OF EXXON CORPORATION

DATE ISSUED: 10/17/86
SUPERSEDES DATE: 08/18/88

MATERIAL SAFETY DATA SHEET

EXXON COMPANY, U.S.A. P.O. BOX 2180 HOUSTON, TX 77252-2180 150100

A. IDENTIFICATION AND EMERGENCY INFORMATION

PRODUCT NAME
UNBRANDED 100 SOLV NEUTRAL

PRODUCT CODE
311465 - 014G5

CHEMICAL NAME
Petroleum Lubricating Oil Base Stock

CAS NUMBER
64742-54-7 or
64742-65-0 or
64741-89-5

PRODUCT APPEARANCE AND ODOR
Clear liquid, light yellow color
Mild, blend petroleum odor

EMERGENCY TELEPHONE NUMBER
(713) 656-3424

B. COMPONENTS AND HAZARD INFORMATION

COMPONENTS	CAS NO. OF COMPONENTS	APPROXIMATE CONCENTRATION
Lubricating Oil Base Stock	64742-54-7 or 64742-65-0 or 64741-89-5	100%

See Section E for Health and Hazard Information.

See Section H for additional Environmental Information.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS)

Health	Flammability	Reactivity	BASIS
1	1	0	Recommended by Exxon

EXPOSURE LIMIT FOR TOTAL PRODUCT	BASIS
5 mg/m3 for oil mist in air	OSHA Regulation 29 CFR 1910.1000
5 mg/m3 for oil mist or fumes (10 mg/m3 STEL)	Recommended by the American Conference of Governmental Industrial Hygienists (ACGIH)
5 mg/m3 for mist in air	Recommended by Exxon

C. PRIMARY ROUTES OF ENTRY AND EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT
If splashed into the eyes, flush with clear water for 15 minutes or until irritation subsides. If irritation persists, call a physician.

SKIN
In case of skin contact, remove any contaminated clothing and wash skin thoroughly with soap and water.

INHALATION
Vapor pressure is very low. Vapor inhalation under ambient conditions is normally not a problem. If overcome by vapor from hot product, immediately remove from exposure and call a physician. If breathing is irregular or has stopped, start resuscitation; administer oxygen, if available. If overexposed to oil mist, remove from further exposure until excessive oil mist condition subsides.

INGESTION
If ingested, DO NOT induce vomiting; call a physician immediately.

D. FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT (MINIMUM)
18[illegible]°C (3[illegible]5°F)
ASTM D 92, Cleveland Open Cup

AUTOIGNITION TEMPERATURE
Not determined

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) - HAZARD IDENTIFICATION

Health	Flammability	Reactivity	BASIS
1	1	0	Recommended by Exxon

HANDLING PRECAUTIONS
Use product with caution around heat, sparks, pilot lights, static electricity, and open flame.

FLAMMABLE OR EXPLOSIVE LIMITS (APPROXIMATE PERCENT BY VOLUME IN AIR)
Estimated values: Lower Flammable Limit 0.9% Upper Flammable Limit 7%

EXTINGUISHING MEDIA AND FIRE FIGHTING PROCEDURES
Foam, water spray (fog), dry chemical, carbon dioxide and vaporizing liquid type extinguishing agents may all be suitable for extinguishing fires involving this type of product, depending on size or potential size of fire and circumstances related to the situation. Plan fire protection and response strategy through consultation with local fire protection authorities or appropriate specialists.

The following procedures for this type of product are based on the recommendations in the National Fire Protection Association's "Fire Protection Guide on Hazardous Materials", Eighth Edition (1984):

Use water spray, dry chemical, foam or carbon dioxide. Use water to keep fire-exposed containers cool. If a leak or spill has not ignited, use water spray to disperse the vapors and to provide protection for men attempting to stop a leak. Water spray may be used to flush spills away from exposures. Minimize breathing gases, vapor, fumes or decomposition products. Use supplied-air breathing equipment for enclosed or confined spaces or as otherwise needed.

DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS
Fumes, smoke, carbon monoxide, aldehydes and other decomposition products, in the case of incomplete combustion.

"EMPTY" CONTAINER WARNING
"Empty" containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to clean since residue is difficult to remove. "Empty" drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All other containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. For work on tanks refer to Occupational Safety and Health Administration regulations, ANSI Z49.1, and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

E. HEALTH AND HAZARD INFORMATION

VARIABILITY AMONG INDIVIDUALS
Health studies have shown that many petroleum hydrocarbons and synthetic lubricants pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized.

EFFECTS OF OVEREXPOSURE (Signs and symptoms of exposure)
Prolonged or repeated skin contact may cause skin irritation.

NATURE OF HAZARD AND TOXICITY INFORMATION
In accordance with the current OSHA Hazard Communication Standard criteria, this product does not require a cancer hazard warning. This is because the product is formulated from base stocks which are severely hydrotreated, severely solvent extracted, and/or processed by mild hydrotreatment and extraction. Alternatively, it may consist of components not otherwise affected by IARC criteria, such as atmospheric distillates or synthetically derived materials, and as such is not characterized by current IARC classification criteria.

Prolonged or repeated skin contact with this product tends to remove skin oils possibly leading to irritation and dermatitis; however, based on human experience and available toxicological data, this product is judged to be neither a "corrosive" nor an "irritant" by OSHA criteria.

Product contacting the eyes may cause eye irritation.

Product has a low order of acute oral and dermal toxicity, but minute amounts aspirated into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death.

This product is judged to have an acute oral LD50 (rat) greater than [illegible] g/kg of body weight, and an acute dermal LD50 (rabbit) greater than 3.16 g/kg of body weight.

PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE
None Recognized

F. PHYSICAL DATA

The following data are approximate or typical values and should not be used for precise design purposes.

BOILING RANGE
IBP Greater than 260°C (500°F)
By ASTM D 2887

SPECIFIC GRAVITY (15.8 C/15.6 C)
0.80-0.87

MOLECULAR WEIGHT
Not Determined

pH
Essentially neutral

POUR, CONGEALING OR MELTING POINT
-18°C (0°F)
Pour Point by ASTM D 97

VISCOSITY
Approximately 105 SSU @ 100°F. May be less than 100 at times.

VAPOR PRESSURE
Less than 0.01 mm Hg @ 20°C

VAPOR DENSITY (AIR = 1)
Greater than 5

PERCENT VOLATILE BY VOLUME
Negligible from open container in 4 hours @ 38°C (100°F)

EVAPORATION RATE @ 1 ATM. AND 25 C (77 F)
(n-BUTYL ACETATE = 1)
Less than 0.01

SOLUBILITY IN WATER @ 1 ATM. AND 25 C (77 F)
Negligible; less than 0.1%

G. REACTIVITY

This product is stable and will not react violently with water. Hazardous polymerization will not occur. Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite or calcium hypochlorite.

H. ENVIRONMENTAL INFORMATION

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Recover free product. Add sand, earth, or other suitable absorbent to spill area. Minimize skin contact. Keep product out of sewers and watercourses by diking or impounding. Advise authorities if product has entered or may enter sewers, watercourses, or on adjacent land areas. Ensure conformity with applicable governmental regulations.

THE FOLLOWING INFORMATION MAY BE USEFUL IN COMPLYING WITH VARIOUS STATE AND FEDERAL REGULATIONS UNDER VARIOUS ENVIRONMENTAL STATUES:

REPORTABLE QUANTITY (RQ), EPA REGULATION 40 CFR 302 (CERCLA Section 102)
Not applicable

THRESHOLD PLANNING QUANTITY (TPQ), EPA REGULATION 40 CFR 355 (SARA Sections 301-304)
Not applicable

TOXIC CHEMICAL RELEASE REPORTING, EPA REGULATION 40 CFR 372 (SARA Sections 311-313)
Not applicable

EPA HAZARD CLASSIFICATION CODE:	Acute Hazard	Chronic Hazard	Fire Hazard	Pressure Hazard	Reactive Hazard	Not Applicable
						XXX

I. PROTECTION AND PRECAUTIONS

VENTILATION
Use local exhaust to capture vapor, mists or fumes, if necessary. Provide ventilation sufficient to prevent exceeding recommended exposure limit or buildup of explosive concentrations of vapor in air. Use explosion-proof equipment. No smoking or open lights.

RESPIRATORY PROTECTION
Use supplied-air respiratory protection in confined or enclosed spaces, if needed.

PROTECTIVE GLOVES
Use chemical-resistant gloves, if needed, to avoid prolonged or repeated skin contact.

EYE PROTECTION
Use splash goggles or face shield when eye contact may occur.

OTHER PROTECTIVE EQUIPMENT
Use chemical-resistant apron or other impervious clothing, if needed, to avoid contaminating regular clothing which could result in prolonged or repeated skin contact.

WORK PRACTICES / ENGINEERING CONTROLS
Keep containers and storage containers closed when not in use. Do not store near heat, sparks, flame or strong oxidants.

PERSONAL HYGIENE
Minimize breathing vapor, mist or fumes. Avoid prolonged or repeated contact with skin. Remove contaminated clothing: launder or dry-clean before reuse. Remove contaminated shoes and thoroughly clean before reuse; discard if oil-soaked. Cleanse skin thoroughly after contact, before breaks and meals, and at end of work period. Product is readily removed from skin by waterless hand cleaners followed by washing thoroughly with soap and water.

J. TRANSPORTATION AND OSHA RELATED LABEL INFORMATION

TRANSPORTATION INCIDENT INFORMATION
For further information relative to spills resulting from transportation incidents, refer to latest Department of Transportation Emergency Response Guidebook for Hazardous Materials Incidents, DOT P 5800.3.

DOT IDENTIFICATION NUMBER
Not applicable

OSHA REQUIRED LABEL INFORMATION
In compliance with hazard and right-to-know requirements, the following OSHA Hazard Warnings should be found on a label, bill of lading or invoice accompanying this shipment.

(OSHA Hazard Warnings not applicable for this product; therefore, no OSHA warnings would appear on the label.)

Note: Product label will contain additional non-OSHA related information.

The information and recommendations contained herein are, to the best of Exxon's knowledge and belief, accurate and reliable as of the date issued. Exxon does not warrant or guarantee their accuracy or reliability, and Exxon shall not be liable for any loss or damage arising out of the use thereof.

The information and recommendations are offered for the user's consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use. If buyer repackages this product, legal council should be consulted to insure proper health, safety and other necessary information is included on the container.

The Environmental Information included under Section H hereof as well as the Hazardous Materials Identification System (HMIS) and National Fire Protection Association (NFPA) ratings have been included by Exxon Company, U.S.A. in order to provide additional health and hazard classification information. The ratings recommended are based upon the criteria supplied by the developers of these rating systems, together with Exxon's interpretation of the available data.

FOR ADDITIONAL INFORMATION ON HEALTH EFFECTS CONTACT:
DIRECTOR OF INDUSTRIAL HYGIENE
EXXON COMPANY, U.S.A.
P. O. BOX 2180 ROOM 3157
HOUSTON, TX 77252-2180
(713) 656-2443

FOR OTHER PRODUCT INFORMATION CONTACT:
MANAGER, MARKETING TECHNICAL SERVICES
EXXON COMPANY, U.S.A.
P. O. BOX 2180 ROOM 2056
HOUSTON, TX 77252-2180
(713) 656-5949

W.E.T. Inc.

Water & Environmental Testing, Inc. 373 West 1830 North Suite 3, Orem Utah 84057 (801)2[illegible]

Acute Whole Effluent Toxicity Report

Fathead Minnow

DATE: 11/23/94

FACILITIES NAME: Utah Fuel Company Sample ID: Water Mixable Hydraulic Fluid Solvent HL

TEST (Animal/Age): Fathead Minnow 3 days SAMPLE (Date/Time): 100 mg/L hydraulic fluid

DATE/TIME TEST BEGAN: 11/19/94 5:30 pm DATE/TIME TEST COMPLETED: 11/23/94 6:00 pm

TEST CONDITIONS

The initial 100 mg/L solution was made by weighing 100 mg of the hydraulic fluid and diluting it to 1 Liter with 180 hardness reconstituted lab water. 6 additional dilutions were made stepwise by using equal volumes of the next higher concentration and room water (1/2 concentration steps). Fathead Minnow larvae 3 days old were used to duplicate as near as possible the previous testing done using similar hydraulic fluids. The survival of the test organisms were monitored throughout the test period. This data was used to generate an LC50 value for this particular product.

Age/Stage at Test Start	3 days
Number of Organisms/Dilution Volume/Replicates	10 organisms/150 ml/[illegible] replicates
Feed	Fed before starting ([illegible]) and at 48 hours
Aeration	None
Dissolved Oxygen	Measured initially and when renewed old/new
Water Replacement	Renewed at 48 hours
Temperature	20 ± 2 degrees C
Photo Period	16 hours light 8 hours dark
pH	Measured initially and at 48 hours
Dilution Water	180 hardness reconstituted laboratory water
Recycling Water	No
Sample Concentrations	Control, 1.56, 3.13, 6.25, 12.5, 25, 50, 100 mg/L

SUMMARY

Results: ☐ Pass ☐ Fail

LC50 calculated using Spearman Karber. Estimated value 8.18 mg/L

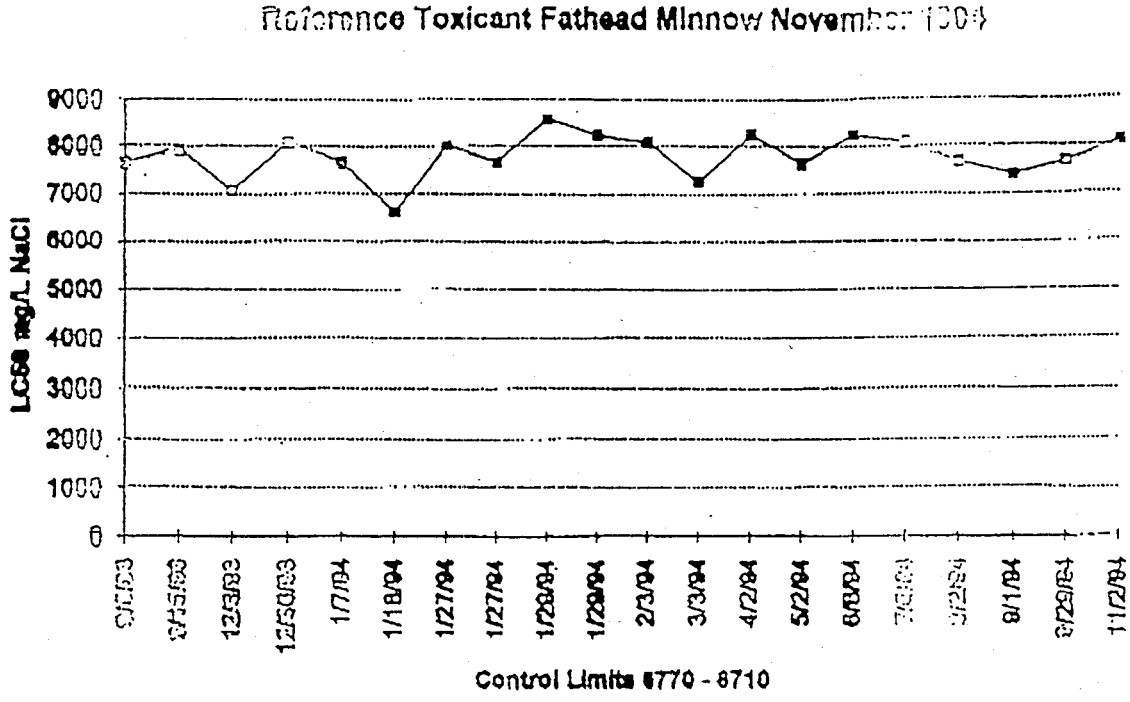
Enclosed are data sheets and statistical reports.

Sincerely,

Les Rawlings

Les Rawlings
Water & Environmental Testing, Inc.

Enclosure


Reference Toxicant Fathead Minnow November 1994
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
LC50 mg/L NaCl
1/7/94
1/18/94
1/27/94
1/27/94
1/28/94
1/28/94
2/3/94
3/3/94
4/2/94
5/2/94
8/1/94
11/2/94
Control Limits 6770 - 8710

Acute Whole Effluent Toxicity Test Report

PERMITTEE NAME: Utah Fuel Company Sample ID: Water Miscible Hydrolic Fluid Solvents III. OUTFALL NO:

50% MORTALITY TEST: _ Pass _ Fail LC50: 8.18 mg/L

TEST (Animal/Age): Fathead Minnows SAMPLE (Date/Type): 100 mg/L hydrolic fluid made immediately before initiating test

DATE/TIME TEST BEGAN: 11/19/94 5:30 pm DATE/TIME TEST CONCLUDED: 11/23/94 6:00 pm

Survival Totals

	Dilutions (mg/L)						
	Recon Water	1.56	3.13	6.25	12.5	25	50
Initial	20	20	20	20	20	20	20
24 hrs	20	20	20	20	20	0	0
48 hrs	20	20	20	20	17	0	0
72 hrs	20	20	20	20	1	0	0
96 hrs	20	20	20	20	0	0	0

Max/Min Values

	Dilutions (mg/L)						
	Recon Water	1.56	3.125	6.25	12.5	25	50
Dissolved Oxygen	7.8/7.0	7.6/6.9	7.6/6.9	7.6/5.8	7.5/5.8	7.5/6.0	7.4/6.3
Temperature (C)	21.5/20.0	21.5	21.5/20.0	21.5/20.0	21.5/20.0	21.5/20.0	21.5/20.0

Hardness: Recon Water 180 Effluent 180

Initial Total Residual Chlorine in 100% Effluent: <0.05

Reconstituted pH: Initial 8.36 After 24 hours 8.43

pH in 100 mg/L conc: Initial 8.54 After 24 hours 8.15

Ammonia Effluent: Initial <0.05 Recon Initial <0.05

Conductivity: Effluent na

Alkalinity: na

Analyst: Lee Rawlings Laboratory: Water & Environmental Testing, Inc

Signature: Lee Rawlings Date: 11-25-94

Comments: _____

W.E.T. Inc

Water & Environmental Testing Inc. 573 West 1830 North Suite 5, Orem Utah 84057 (801)221-5440

Acute Whole Effluent Toxicity Report

Fathead Minnow

DATE: September 11, 1995

PERMITTEE NAME: Utah Fuel Co. (24 Hour Screen) **SAMPLE ID:** Pond Fill Water (X cut 81 sump, Mine #1)

TEST *(Animal/Age)*: Fathead Minnow 7 days. **SAMPLE** *(Date/Type)*: 9/7/95 Grab.

DATE/TIME TEST BEGAN: 9/7/95 5:30 p.m. **DATE/TIME TEST COMPLETED:** 9/8/95 5:30 p.m.

TEST CONDITIONS

Fathead Minnow larvae were exposed to 100% effluent as specified. Survival at the end of the test period was measured and statistically evaluated for Acute Toxicity.

Animal Age at Test Start	7 days.
Number of Organisms/Dilution Volume/Replicates	10 organisms/150 ml/2 replicates.
Food	Brine Shrimp fed previous to test.
Aeration	None required.
Dissolved Oxygen	Measured daily old/new.
Water Replacement	Renewed every 24 hours.
Temperature	20 ± 2 degrees C.
Photo Period	16 hours ambient light/8 hours dark.
pH	Measured initially and at 24 hours.
Dilution Water	Reconstituted water (±15% hardness of the sample).
Receiving Water	None was submitted.
Sample Concentrations	Control, 100%.

SUMMARY

Results: [X] Pass [ ] Fail

There was NO significant effect on survival.

Enclosed are data sheets and statistical reports.

Sincerely,

Lee Rawlings

Lee Rawlings
Water & Environmental Testing, Inc.

Enclosure

Region VIII Guidance for Acute Whole Effluent Reporting

PERMITTEE NAME: Utah Fuel Co. (24 Hour Screen) **SAMPLE ID:** Pond Fill Water (X cut 81 sump, Mine #1)

50% MORTALITY TEST: X Pass _ Fail **LC50:** >100%.

TEST *(Animal/Age)*: Fathead Minnow 7 days. **SAMPLE** *(Date/Type)*: 9/7/95 Grab.

DATE/TIME TEST BEGAN: 9/7/95 5:30 p.m. **DATE/TIME TEST COMPLETED:** 9/8/95 5:30 p.m.

Survival Totals

	Recon Water	Receiving Water	Dilutions (% Effluent) 6.25%	12.5%	25%	50%	100%
Initial	20	na	na	na	na	na	20
24 hrs	20	na	na	na	na	na	20
48 hrs	na	na	na	na	na	na	na
72 hrs	na	na	na	na	na	na	na
96 hrs	na	na	na	na	na	na	na

Max/Min Values

	Recon Water	Receiving Water	Dilutions (% Effluent) 6.25%	12.5%	25%	50%	100%
Dissolved Oxygen	na	21.0/20.4	na	na	na	na	7.3/6.2
Temperature (°C)	7.2/6.5	na	na	na	na	na	20.6

Receiving Water used for Dilution? (Y of N) N

Hardness: Receiving Water na Recon Water 443 Effluent 592

Initial Total Residual Chlorine in 100% Effluent: <0.05

Reconstituted pH: Initial 8.58 After 24 hours 8.47

Receiving Water pH: Initial na After 24 hours na

pH in 100% Effluent: Initial 7.88 After 24 hours 8.09

Ammonia Effluent: Initial <0.05 Recon Initial <0.05

Conductivity: Effluent 1,327

Alkalinity: 365

Analyst: Lee Rawlings **Laboratory:** Water & Environmental Testing, Inc.

Signature: L.L. Rawlings **Date:** 9/11/95

Comments:

W.E.T. Inc.

Water & Environmental Testing Inc. 573 West 1830 North Suite 5, Orem Utah 84057 (801)221-5440

Acute Whole Effluent Toxicity Chemical Result Report

September 11, 1995

CUSTOMER NAME:
Utah Fuel Co.
Attn: Barry Barnham
P.O. Box 719
Helper, Utah 84526

PHONE NUMBER: (801)637-7925
FAX NUMBER: (801)637-7929

SAMPLE DESCRIPTION:
Chemistries to go with Acute Fathead Minnow Toxicity Screen Collected 9/7/95.

Sample Source	Test Performed	Log Number	Test Results
Effluent	Total Hardness, Recon (EPA 130.2)	1201	443 mg/L
	Total Hardness, Effluent (EPA 130.2)	1201	592 mg/L
	Total Hardness, Receiving Water (EPA 130.2)	Na	na mg/L
	Ammonia, Effluent (EPA 350.2/350.3)	1201	<0.05 mg/L
	Ammonia, Receiving Water (EPA 350.2/350.3)	Na	na mg/L
	Initial Chlorine Residual (EPA 330.5)	1201	<0.05 mg/L
	Final Chlorine Residual (EPA 330.5)	1201	na mg/L
	Conductivity, Effluent (EPA 120.1)	1201	1,327 umhos/cm
	Alkalinity, Effluent (EPA 310.1)	1201	365 mg/L $CaCO_3$
	Conductivity, Receiving Water (EPA 120.1)	Na	na umhos/cm
	Alkalinity, Receiving Water (EPA 310.1)	Na	na mg/L $CaCO_3$
	Recon Initial pH (EPA 150.1)	1201	8.58
	After 24 hours pH (EPA 150.1)	1201	8.47
	100% Initial pH (EPA 150.1)	1201	7.88
	100% After 24 hours pH (EPA 150.1)	1201	8.09
	Receiving Water Initial pH (EPA 150.1)	Na	na
	Receiving Water After 24 hours pH (EPA 150.1)	Na	na

Lee Rawlings

Analyst: Lee Rawlings, Chemist
Water & Environmental Testing, Inc.

W.E.T. Inc

Water & Environmental Testing Inc. 573 West 1830 North Suite 5, Orem Utah 84057 (801)221-5440

Acute Whole Effluent Toxicity Report

Fathead Minnow

DATE: September 11, 1995

PERMITTEE NAME: Utah Fuel Co. (48 Hour Screen) SAMPLE ID Pond Water

TEST *(Animal/Age)*: Fathead Minnow 6 days. SAMPLE *(Date/Type)*: 9/9/95 Grab.

DATE/TIME TEST BEGAN: 9/9/95 1:30 p.m. DATE/TIME TEST COMPLETED: 9/11/95 12:30 p.m.

TEST CONDITIONS

Fathead Minnow larvae were exposed to 100% effluent as specified. Survival at the end of the test was measured and statistically evaluated for Acute Toxicity.

Animal Age at Test Start	6 days.
Number of Organisms/Dilution Volume/Replicates	10 organisms/150 ml/2 replicates.
Food	Brine Shrimp fed previous to test.
Aeration	None required.
Dissolved Oxygen	Measured daily old/new.
Water Replacement	Renewed every 24 hours.
Temperature	20 ± 2 degrees C.
Photo Period	16 hours ambient light/8 hours dark.
pH	Measured intially and at 24 hours.
Dilution Water	Reconstituted water (±15% hardness of the sample).
Receiving Water	None was submitted.
Sample Concentrations	Control,100%.

SUMMARY

Results: [X] Pass [ ] Fail

There was NO significant effect on survival.

Enclosed are data sheets and statistical reports.

Sincerely,

Lee Rawlings

Lee Rawlings
Water & Environmental Testing, Inc.

Enclosure

Region VIII Guidance for Acute Whole Effluent Reporting

PERMITTEE NAME: Utah Fuel Co. (48 Hour Screen) **SAMPLE ID:** Pond Water

50% MORTALITY TEST: X Pass _ Fail **LC50:** >100%.

TEST *(Animal/Age)*: Fathead Minnow 6 days. **SAMPLE** *(Date/Type)*: 9/9/95 Grab.

DATE/TIME TEST BEGAN: 9/9/95 1:30 p.m. **DATE/TIME TEST COMPLETED:** 9/11/95 12:30 p.m.

Survival Totals

	Dilutions (% Effluent)						
	Recon Water	Receiving Water	6.25%	12.5%	25%	50%	100%
Initial	20	na	na	na	na	na	20
24 hrs	20	na	na	na	na	na	20
48 hrs	20	na	na	na	na	na	20
72 hrs	na	na	na	na	na	na	na
96 hrs	na	na	na	na	na	na	na

Max/Min Values

	Dilutions (% Effluent)						
	Recon Water	Receiving Water	6.25%	12.5%	25%	50%	100%
Dissolved Oxygen	7.3/6.7	na	na	na	na	na	7.8/6.0
Temperature (°C)	21.0/20.2	na	na	na	na	na	20.4/20.2

Receiving Water used for Dilution? (Y of N) N

Hardness: Receiving Water na Recon Water 443 Effluent 528

Initial Total Residual Chlorine in 100% Effluent: <0.05

Reconstituted pH: Initial 8.49 After 24 hours 8.53

Receiving Water pH: Initial na After 24 hours na

pH in 100% Effluent: Initial 8.09 After 24 hours 8.31

Ammonia Effluent: Initial 0.40 Recon Initial <0.05

Conductivity: Effluent 1,680

Alkalinity: 431

Analyst: Lee Rawlings **Laboratory:** Water & Environmental Testing, Inc.

Signature: Lee Rawlings **Date:** 9/11/95

Comments:

W.E.T. Inc.

Water & Environmental Testing Inc. 573 West 1830 North Suite 5, Orem Utah 84057 (801)221-5440

Acute Whole Effluent Toxicity Chemical Result Report

September 11, 1995

CUSTOMER NAME:
Utah Fuel Co.
Attn: Barry Barnham
P.O. Box 719
Helper, Utah 84526

PHONE NUMBER: (801)637-7925
FAX NUMBER: (801)637-7929

SAMPLE DESCRIPTION:
Chemistries to go with Acute Fathead Minnow Toxicity Screen Collected 9/9/95.

Sample Source	Test Performed	Log Number	Test Results
Effluent	Total Hardness, Recon (EPA 130.2)	1202	443 mg/L
	Total Hardness, Effluent (EPA 130.2)	1202	528 mg/L
	Total Hardness, Receiving Water (EPA 130.2)	Na	na mg/L
	Ammonia, Effluent (EPA 350.2/350.3)	1202	0.40 mg/L
	Ammonia, Receiving Water (EPA 350.2/350.3)	Na	na mg/L
	Initial Chlorine Residual (EPA 330.5)	1202	<0.05 mg/L
	Final Chlorine Residual (EPA 330.5)	1202	na mg/L
	Conductivity, Effluent (EPA 120.1)	1202	1,680 umhos/cm
	Alkalinity, Effluent (EPA 310.1)	1202	431 mg/L $CaCO_3$
	Conductivity, Receiving Water (EPA 120.1)	Na	na umhos/cm
	Alkalinity, Receiving Water (EPA 310.1)	Na	na mg/L $CaCO_3$
	Recon Initial pH (EPA 150.1)	1202	8.49
	After 24 hours pH (EPA 150.1)	1202	8.53
	100% Initial pH (EPA 150.1)	1202	8.09
	100% After 24 hours pH (EPA 150.1)	1202	8.31
	Receiving Water Initial pH (EPA 150.1)	Na	na
	Receiving Water After 24 hours pH (EPA 150.1)	Na	na

Lee Rawlings

Analyst: Lee Rawlings, Chemist
Water & Environmental Testing, Inc.

Coastal
The Energy People

Plan to Prevent Overflow of Emulsion From Mixing Tank

The spill of longwall emulsion fluid which occured at the Skyline Mine #1 on September 6, 1995, was caused by the failure of a motorized valve which supplies water to the emulsion mixer. The valve is designed to close when enough emulsion has been produced to fill the mixing tank which is located underground. When the valve failed to close the tank continued to produce emulsion which overflowed directly into an underground sump. From the sump the emulsion was pumped directly into the surface sediment pond from which it was discharged into Eccles Creek.

The emulsion which was discharged into the creek is highly soluable and biodegradable. As a result there was no oil slick on the surface of the creek and no oil coating on the stream bed. The emulsion became entirely dissolved in the stream water making any clean-up efforts impossible and unnecessary.

In order to prevent such a spill from occuring in the future the following steps have been taken or will be taken upon approval:

- A back-up motorized valve has been installed in series with the primary value. These valves are designed to open electrically and close by spring action if there is no power. If one valve fails to close there is a back-up valve to stop the mixing process.

- A back-up float switch has been installed in the emulsion tank. This switch will shut down the emulsion system immediately and set off an alarm on the surface monitoring system if the tank is over filled.

- The emulsion tank, motorized valves, and overfill float switch will be inspected once each operating shift to determine that they are in good working order and immediate repairs or replacements will be made when necessary. Each inspection will be recorded and the record will be made available for regulatory inspection at the mine office.

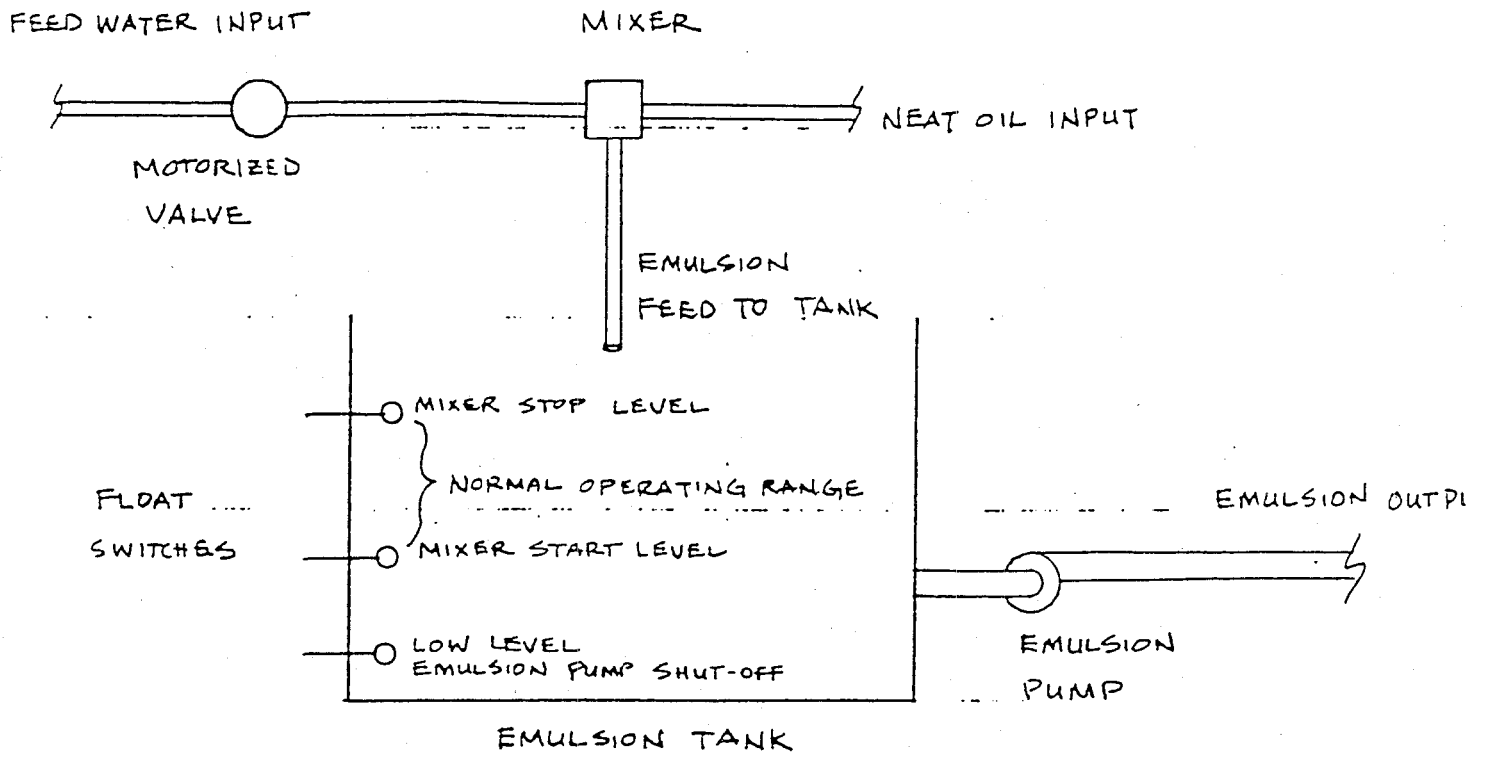
The attached sketches show the emulsion control system BEFORE the spill and the modifications made AFTER the spill to prevent overfilling of the emulsion tank in the future.

09/13/95

Utah Fuel Company
A SUBSIDIARY OF THE COASTAL CORPORATION
P.O. BOX [illegible] • HELPER UT 84526-0719 • 801 637-7925 • FAX 801 637-7929 • SALT LAKE 801 [illegible]

CHKD. BY.....DATE..... JOB NO.....

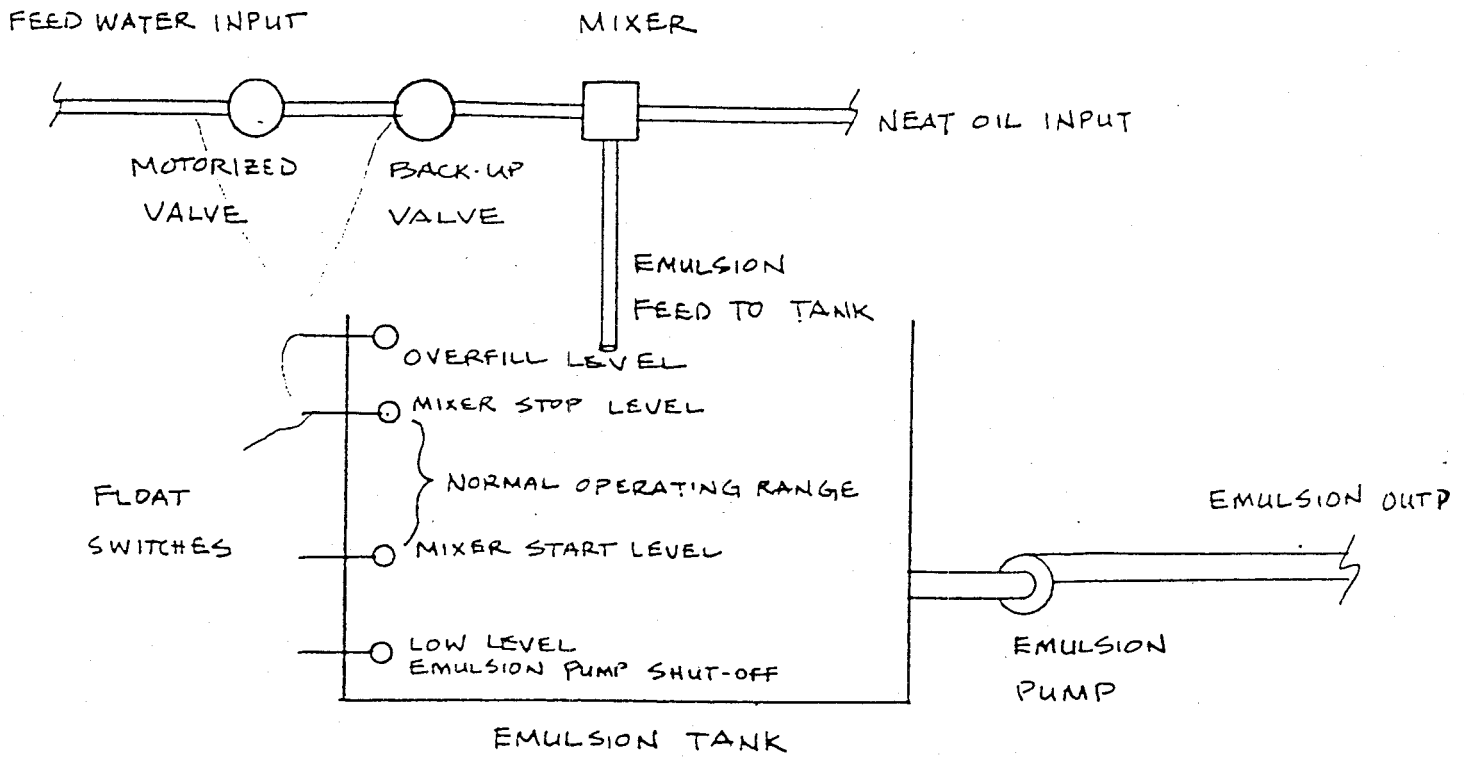
BEFORE



MOTORIZED VALVE IS OPENED BY MIXER START FLOAT SWITCH AND CLOSES BY SPRING ACTION WHEN THE MIXER STOP LEVEL IS REACHED. THE MOTORIZED VALVE FAILED TO CLOSE COMPLETELY

CHKD. BY.....DATE..... JOB NO.....

AFTER



MOTORIZED VALVE IS OPENED BY MIXER START FLOAT SWITCH AND CLOSES BY SPRING ACTION WHEN THE MIXER STOP LEVEL IS REACHED. THE MOTORIZED VALVE FAILED TO CLOSE COMPLETELY. BACK-UP MOTORIZED VALVE IS CONNECTED IN SERIES SO IF ONE VALVE FAILS THE OTHER WILL STOP THE FLOW. THE OVERFILL LEVEL FLOAT SWITCH IS CONNECTED IN SERIES WITH THE MIXER STOP LEVEL SWITCH SO THERE IS BACK-UP POWER SHUT-OFF TO MOTORIZED VALVES. ALSO OVERFILL SWITCH WILL SET OFF ALARM ON SURFACE.

APPENDIX B

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE RESOURCES

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
Robert G. Valentine
Division Director

1596 West North Temple
Salt Lake City, Utah 84116-3195
801-538-4700
801-538-4709 (Fax)

September 20, 1995

Don Ostler, Director
Division of Water Quality
288 North 1460 West
Salt Lake City, UT 84140-4870

Dear Don:

We have completed our investigation of the fish kill on September 6, 1995, at Mud Creek and Eccles Creek caused by the discharge of emulsifier from Skyline Mine. The following is a breakdown of cost to the resource and to the Division of Wildlife Resources:

Investigation and Reporting:	
15 man days @ $176.00/day	
Vehicle costs (500 miles @ $0.25/mile)	$2,765.00
Lost Fish:	
2419 cutthroat trout	
(see attached cost breakdown)	2,053.67
Lost Recreation:	
20 angler days @ $22/day	440.00
Fish Transplant from Electric Lake:	
Transportation (600 miles @ $0.25/mile)	
10 man days @ $176.00/day	1,910.00
Total	$7,166.67

By transplanting adult cutthroat from Electric Lake to the impacted streams, the population will quickly be restored and the loss to recreational fishing minimized. The transplant will occur next spring after the aquatic invertebrate population has recovered. Without the transplant several years of recreational fishing, valued at over $10,000, would be lost.

Representatives of the Skyline Mine have been very cooperative with the Division and have responded quickly to our requests and concerns. This cooperation has allowed us to assess the damage to the fishery and develop creative mitigation proposals.

Sincerely,

Robert G. Valentine
Director

RGV/gd

attachment

cc: Ralph Miles
Miles Moretti
Randy Radant

ATTACHMENT

The cost of the cutthroat trout killed in Eccles and Mud Creeks was calculated in the following manner:

A) number of fish killed in each stream was estimated using a two pass depletion method.

B) Dead fish from each stream were measured, to find the size distribution of the affected fish.

The size distribution measured was then applied to the estimated number of fish killed to reach an estimate of the number of each size of fish killed.

C) Finally, the dollar value of the dead fish was calculated using values approved by the American Fisheries Society in 1989. The total value was increased by 18% (3% per year) to account for inflation.

Mud Creek & Eccles Creek Fish Kill Cost Calculation					
Size (Inches)	Eccles Crk.	Mud Crk.	Total Fish Killed	1989 Cost Per Fish	Total Cost
1	0	0	0	$0.13	$0.00
2	7	0	7	$0.18	$1.26
3	0	0	0	$0.25	$0.00
4	0	0	0	$0.34	$0.00
5	0	162	162	$0.39	$63.18
6	15	974	989	$0.51	$504.39
7	29	365	394	^0.57	$224.58
8	7	162	169	$0.67	$113.23
9	23	123	146	$0.83	$121.18
10	88	162	250	$1.06	$265.00
11	29	162	191	$1.33	$254.03
12	15	41	56	$1.60	$89.60
13	7	41	48	$1.89	$90.72
14	0	0	0	$1.89	$0.00
15	0	0	0	$1.89	$0.00
16	7	0	7	$1.89	$13.23
	227	2192	2419	$1,740.40 X 18% = $2,053.67	